

```
XX Antitoxin; vaccine; neurotoxin; toxin B; intoxication; immunogen;
KW botulism; BotB.
XX
OS Clostridium botulinum; serotype B strain Eklund 17B.
XX Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "N-terminal His tag"
XX
PN WO9808540-A1.
XX
PD 05-MAR-1998.
XX
PF 28-AUG-1997; 97WO-US015394.
XX
PR 28-AUG-1996; 96US-00704159.
XX
PA (OPHI-) OPHIDIAN PHARM INC.
XX
PI Williams JA, Thalley BS;
XX
DR WPI; 1998-230234/20.
DR N-PSDB; AAV30580.
XX
PT Host cell containing recombinant expression vector encoding Clostridium
PT botulinum type B or E toxin - useful to treat humans and other animals at
PT risk of intoxication with clostridial toxin.
XX
PS Example 35; Page 300-302; 428pp; English.
XX
CC This is the amino acid sequence of the histidine-tagged C fragment of
CC Clostridium botulinum (Eklund 17B strain) type B toxin, encoded by a DNA
CC sequence (see AAV30580) in plasmid pHisBotB. This vector was used to
CC express soluble C fragment in Escherichia coli host cells, and the
CC recombinant C fragment was purified on an affinity column. The invention
CC relates to recombinant proteins derived from C. botulinum toxins. Methods
CC are provided which allow for the isolation of soluble recombinant
CC proteins free of significant endotoxin contamination. Preferred hosts for
CC production of recombinant proteins are E. coli, insect cells and yeast
CC cells. The recombinant toxins are used as immunogens for the production
CC of vaccines and antitoxins that are useful in the treatment of humans and
CC animals at risk of intoxication with clostridial toxin
XX
SQ Sequence 472 AA;
AAW68393 Length: 472 August 31, 2004 14:39 Type: P Check: 5316 ..
Found using 'seq23' (hayes346.key)
...
19 GRMASMDTILIEPNKYNSEILANNIILNRYDRNNLIDLSGYGAKVEVDGVKLNKX
69 72
79 QFKLTSSADSKIRVTQNMNIIFNSMFLDPSVFWIRIPKYRNDIDQNIYHNEYTIINCMK
131
139 NNSGWKISIRGNRIIWTLLIDNGKYSVEFYNEIRDISEYINRWF
...
189 TNNLDNAKIYINGTLESNMDIKDIGEVIYNGBITFKLDGDVDRTQFIWMKYFSIFNTQLN
239
249 QSNKEIKYKTSYSEYKLDQFWGNPLMYNKEYYFNAGNKNYIKLVKFDSSVGEILIRSKY
261 279 290
---
```

```
309 NQNSINYINRYIGEKFIIRRESQSINDDIVRKEDYIHLDLVLHHEWRYAYKYPK
314 317
369 EQBEKFLSIISDSNEFYETIEIKYEQPSYSCQLLFKDEESTDDIGLIGHRFYBSG
386
429 VLKKYKDYFCISKWYLKEVKRKPYSKLNLCNMQFIPKDEGWTE
434 437
-----
14 matches found in sequence:
aaw68394 ; Clostridium botulinum toxin B C fragment.
(from "bt_ags pep")
TOIG of: aaw68394 check: 3754 from: 1 to: 472
ID AAW68394 standard; protein; 472 AA.
XX
AC AAW68394;
XX
DT 07-DEC-1998 (first entry)
XX
DE Clostridium botulinum toxin B C fragment.
XX
KW Antitoxin; vaccine; neurotoxin; toxin B; intoxication; immunogen;
KW botulism; BotB.
XX
OS Clostridium botulinum; serotype B Danish strain.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "N-terminal His tag"
XX
PN WO9808540-A1.
XX
PD 05-MAR-1998.
XX
PF 28-AUG-1997; 97WO-US015394.
XX
PR 28-AUG-1996; 96US-00704159.
XX
PA (OPHI-) OPHIDIAN PHARM INC.
XX
PI Williams JA, Thalley BS;
XX
DR WPI; 1998-230234/20.
DR N-PSDB; AAV30581.
XX
PT Host cell containing recombinant expression vector encoding Clostridium
PT botulinum type B or E toxin - useful to treat humans and other animals at
PT risk of intoxication with clostridial toxin.
XX
PS Example 35; Page 303-305; 428pp; English.
XX
CC This is the amino acid sequence of the histidine-tagged C fragment of
CC Clostridium botulinum (Danish strain) type B toxin, encoded by a DNA
CC sequence (see AAV30581) in plasmid pETHisB. This vector was used to
CC express soluble C fragment in Escherichia coli host cells, and the
CC recombinant C fragment was purified on an affinity column. The invention
CC relates to recombinant proteins derived from C. botulinum toxins. Methods
CC are provided which allow for the isolation of soluble recombinant
CC proteins free of significant endotoxin contamination. Preferred hosts for
CC production of recombinant proteins are E. coli, insect cells and yeast
CC cells. The recombinant toxins are used as immunogens for the production
CC of vaccines and antitoxins that are useful in the treatment of humans and
CC animals at risk of intoxication with clostridial toxin
XX
```

```
SQ      Sequence 472 AA;
AAW68394 Length: 472 August 31, 2004 14:39 Type: P Check: 3754
Found using 'seq23' (hayes346.key)
...
19      GRHMASMDTILIEFNKYNKNSILANNIILNURYKDNNDLIDLSGYGAKVEYVDGVELNDKN
      69 72
79      QPKLTSSANSKIRVTQNMNIENSFLDPSVSFWIRIPKYKNDGIGNYIHNEVYTIINCMK
      131
139     NNSGWKISIRGNRIITWLDINGKTKSVFFVNIREDISEYINRWF
...
189     TNNLANKIYINGKLESNTDIDKIREVIANGELIIFKLDGDDIDRTQFIWMKYFSIFNTELS
      239
249     QSNIBERYKIQSYSEYKDPWGNPLMYNKYYMFNAGNKNYSYIKLKDSPVGEILTRSKY
      261 279 290
309     NNSKIYNTRDYIGEKFIIRKNSQSINDIVKEDYIYLDFFNLNQEWVYTYFYK
      314 317 347 349
369     KEEKLFLAPISDSDEFYNTIQIKEYDQPTVSCQLLFKKDEESTDEIGLIGHRFYESG
      386
429     IVFEYKDYFCISKWYKVEKRPYNLKGCMWQFIPKDEGWE
      434 437
-----
12 matches found in sequence:
aaw68395 ; Clostridium botulinum toxin E C fragment.
(from "bt_ags.pep")
TOIG of: aaw68395 check: 1515 from: 1 to: 451

ID      AAW68395 standard; protein; 451 AA.
XX
AC      AAW68395;
XX
DT      07-DEC-1998 (first entry)
XX
DE      Clostridium botulinum toxin E C fragment.
XX
KW      Antitoxin; vaccine; neurotoxin; toxin E; intoxication; immunogen;
      botulism; BotE.
XX
OS      Clostridium botulinum; serotype E strain Belgua.
XX
FH      Key
FT      Peptide
      Location/Qualifiers
      1..21
      /note= "N-terminal His tag"
XX
PN      WO9808540-A1.
XX
PD      05-MAR-1998.
XX
PF      28-AUG-1997; 97WO-US015394.
XX
```

```
PR      28-AUG-1996; 96US-00704159.
XX      (OPHI-) OPHIDIAN PHARM INC.
XX      Williams JA, Thalley BS;
XX      WPI; 1998-230234/20.
DR      N-PSDB; AAV30584.
XX
PT      Host cell containing recombinant expression vector encoding Clostridium
      botulinum type B or E toxin - useful to treat humans and other animals at
      risk of intoxication with clostridial toxin.
PS      Example 41; Page 324-325; 428pp; English.
XX
CC      This is the amino acid sequence of the histidine-tagged C fragment of
      Clostridium botulinum (Belgua strain) type E neurotoxin, encoded by a DNA
      sequence (see AAV30584) in plasmid pETHisB. This vector is used to
      express BotE soluble C fragment in Escherichia coli host cells, and the
      recombinant C fragment was purified on an affinity column. The invention
      relates to recombinant proteins derived from C. botulinum toxins,
      especially type B and type E toxins. Methods are provided which allow for
      the isolation of soluble recombinant proteins free of significant
      endotoxin contamination. Preferred hosts for production of recombinant
      proteins are E. coli, insect cells and yeast cells. The recombinant
      C toxins are used as immunogens for the production of vaccines and
      antitoxins that are useful in the treatment of humans and animals at risk
      of intoxication with clostridial toxin
XX      Sequence 451 AA;
SQ
AAW68395 Length: 451 August 31, 2004 14:39 Type: P Check: 1515
Found using 'seq23' (hayes346.key)
...
55      MRYKNDKYVDTSGYDSNININGDVYKPTNKNQFGIYNDKLSSEWISQNDYIYDNKYN
      105 112
115     PSISFWVRIPNYDNKIYVNVANNEYTIINCMDNNSGKVSILNHEIITWLDNSGINQKLA
      115 137
175     FNYGNANGISDYINKWIFVTITNDRLGDSKLYINGNLIDKKSILNLGNIHVSNDILFKIV
      177
235     NCSYTRYIGIRYFNIFDKELDETEIQTLYNNEPNANILKDFWGNLYLLYDKFYLLNLVKP
      238 246 241 279 286
295     NNFINRRDSTLSINNIRSTILLANRLYSGIKVKIQFVANNSSITNDNLVRKNQVYINFA
      322 349
355     SKTHLLPLYADTATNKEKTIKISSGNRFNQVVMNSVGNCTMFPKNNNGNIGLGPX
415     ADTVVASTWYTYTHMRDNTNSNGFPWFNFISEHCQKEK
      425
-----
12 matches found in sequence:
aaw68396 ; Clostridium botulinum toxin E C fragment.
(from "bt_ags.pep")
TOIG of: aaw68396 check: 4403 from: 1 to: 452

ID      AAW68396 standard; protein; 452 AA.
XX
AC      AAW68396;
```